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ABSTRACT

This report documents the nature of teacher shortages in Connecticut for the 1987-88 school year from multiple perspectives. A general overview is provided through a statewide analysis based on totals summed across all positions. Analyses of individual positions and position categories with reference to the number of school districts with vacancies provide more detailed information on the possible existence of teacher shortages. The most precise estimate of teacher shortages in the report is made through the calculations of a teacher shortage index. Analyses are conducted on selected teacher and administrative positions to investigate whether a particular county or type of community attracted more applicants than others for the same type of position. (JD)

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FALL HIRING REPORT

**Certified Professional Staff Vacancies
As of September 1, 1987**

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PREFACE

In accordance with Section 10a-163 of the Connecticut General Statutes, a teacher shortage survey was conducted in the fall of the 1987-88 school year to determine whether a critical shortage of teachers exists in particular areas of certification. Section 10a-163 mandates the determination of five fields with a critical shortage of teachers. Determination of shortage areas is to be based minimally on the number of teacher vacancies, new certificates issued by the State Department of Education during the previous year, and the number and types of classes being taught by persons without the appropriate certification.

Data were collected from all 166 local and regional public school districts, three endowed and incorporated academies, six regional educational service centers, three unified school districts, and the vocational-technical schools using form ED156, Teacher Shortage Survey (see Appendix D). Fifty-two areas requiring teacher certification were identified, as were eight administrative positions. Information was requested on the number of vacancies for each area of certification and the number of certified applicants. The number of remaining vacancies as of September 1, as well as September 1 vacancies attributed to the lack of a qualified person, were also requested.

It should be noted that this was the first year of data collection using form ED156. Hence, there are a few caveats associated with the data which should be kept in mind when interpreting the results. One caveat is inconsistent data reporting due to misinterpretations of column headings. Some incorrect data reporting occurred with reference to the number of certified applicants. At least one district reported the number of applicants interviewed and other districts may have made the same error. This could make the pool of applicants appear smaller than it actually was.

Another caveat is the reporting of the number of certified applicants with experience instead of all certified applicants who were screened for the position. At the other extreme, the number of certified applicants appeared to be overestimated. At least one district reported a very high number of applicants. This may have been due to the inclusion of applicants in an active file more than two years old and/or the inclusion of people who were merely interested in the position but did not apply. If the data appeared incorrect, the district was called to verify the data.

To minimize the potential bias associated with underestimates and overestimates, the median, instead of the mean, was used to describe the application data. The median describes the typical number of applications and is not affected by extreme cases. Also, the maximum number of applications was used as a lower limit of an unduplicated count for a particular position. The number of applications per position does not represent a unique pool of applicants, since a prospective teacher or administrator can apply to more than one district. Both types of information more accurately describe the teacher shortage data.

The report that follows describes the nature of teacher shortages in Connecticut for the 1987-88 school year from multiple perspectives. A general overview is provided through a statewide analysis. Since this analysis is based on totals summed across all positions, the results provide a very general indication of the nature of a teacher shortage in the state. It is included to alert the reader to the dangers of drawing conclusions from a very limited analysis. Analyses of individual positions and position categories with reference to the number of school districts with vacancies provide more detailed information on the possible existence of teacher shortages. The

most precise estimate of teacher shortages in this report for the state of Connecticut is made through the calculation of a teacher shortage index. Collectively, these results should make it possible to more accurately identify any teacher shortage areas for the 1987-88 school year. Finally, analyses are conducted on selected teacher and administrative positions to investigate whether a particular county or type of community attracted more applicants than others for the same type of position.

HIGHLIGHTS

Significant facts about teacher shortages are summarized here. In each case the table, figure or page in the report from which the information was taken is referenced. The reader is encouraged to look there for more specific details.

- o The calculation of a teacher shortage index identified speech and hearing, industrial arts, media specialist, school psychologist and Latin as the five areas of greatest shortage for the 1987-88 school year (see Table 5 and Appendix C).
- o History/social studies, deaf education and general science were identified as the areas of lowest teacher shortage for the 1987-88 school year (see Table 5 and Appendix C). Math and science were not shortage areas for the 1987-88 school year (see page 6 and Appendix C).
- o Prior to the beginning of the 1987-88 school year, a total of 2,429 full-time and 416 part-time teacher and administrator vacancies were advertised by Connecticut school districts. A total of 38,706 applications of appropriately certified applicants were reviewed (see page 1 and Appendix A).
- o As of September 1, 117 full-time vacancies remained for 24 different teacher and administrative positions due to the lack of qualified applicants. Vacancies in speech and hearing, school psychologist, media specialist and teachers of the mentally retarded positions collectively accounted for more than 75 percent of these vacancies (see page 1 and Appendix A).
- o The greatest number of districts, 114, reported vacancies for full-time elementary education teacher positions. The fewest number of districts reported a full-time vacancy in Italian (1) and psychology (1). For administrator positions, 45 districts reported at least one full-time vacancy for a vice principal (see Table 1 and Appendix B).
- o The areas receiving the fewest number of applicants per district included speech and hearing (median=4), home economics and physics (median=5) and industrial arts, chemistry and teachers of the physically handicapped (median=6) — (see Table 2).
- o Districts reporting full-time vacancies identified the greatest lack of qualified persons for industrial arts/technology, pupil personnel director, school psychologist, media specialist and speech and hearing positions (see Table 3 and Appendix B).
- o The median number of applicants was calculated for selected positions (elementary, teachers of the learning disabled, and vice principals) by county and community type. No consistent pattern resulted (see Tables 6 - 11).

PRELIMINARY SHORTAGE ANALYSIS

The Teacher Shortage Survey was distributed to all 166 local and regional public school districts, six regional educational service centers (RESCs), three academies, the 17 regional vocational-technical schools, and three unified school districts in Connecticut, in compliance with Section 10a-163 of the state statutes. The results of the survey presented in this report are representative of the above district types. However, each district did not return a completed survey. The data for the elementary schools within Regional School Districts 1, 4, 8, and 11 were aggregated and reported by the respective regional school district. Also, data for the 17 vocational-technical schools were collectively reported by the central office. Six public school districts (Colebrook, Eastford, Preston, New Hartford, Thomaston and Region 11) and two regional educational service centers (RESCUE and ACES) reported no advertised positions for the 1987-88 school year. These eight districts are not included in any analysis. For the purpose of this report, all educational units are collectively referred to as districts. More specific distinctions are made where necessary.

Statewide analysis. Prior to the beginning of the 1987-88 school year, 2,429 full-time and 416 part-time teacher and administrator vacancies were advertised by Connecticut school districts. Positions that were not advertised or that were filled internally were excluded from the totals. Internally filled positions did not contribute to the identification of shortage areas since a search was not conducted. Positions were also excluded if the application process was incomplete, most likely due to late resignations. If no applications were received for a position it could not be determined whether a qualified applicant was available. Incomplete hiring was indicated on the survey form by the responding district.

In response to the advertised positions, an application from an appropriately certified candidate was supposed to be reported if it was submitted for consideration or drawn from an active file that was less than two years old. For the advertised positions, 38,706 applications from appropriately certified candidates were screened. The totals reported here and throughout this report do not represent a unique pool of applications. An application could have been submitted for a position in more than one school district. However, the maximum number of applications for a position provides a lower limit of the number of unique applications for that position.

Only a few of the 156 districts which reported a vacancy seemed to experience difficulty filling their vacancies. A total of 37 districts reported vacancies due to the lack of a qualified applicant. No qualified applicants were found for 24 different teacher and administrator positions. Four of these (speech and hearing, school psychologist, media specialist and teachers of the mentally retarded) collectively accounted for more than 75 percent of the 117 vacancies (see Appendix A). The median number of certified applications reviewed per district per position was 15, with a maximum of 500 (see Appendix B).

The overall number of teacher vacancies and the number of applicants per position provide a very general description of the teacher shortage in Connecticut. However, as with all generalizations, some information is lost. To more accurately assess the extent of the teacher shortage, vacancies were investigated for individual positions and position groups.

Individual positions. Teacher shortage areas were investigated through an analysis of individual areas of certification or positions. The vacancies reported by a district were included if a minimum of one full-time vacancy existed. Part-time vacancies were not included in this analysis since they represent a different type of hiring procedure for the district and a different type of career opportunity for prospective candidates. Part-time vacancies, however, are included in the calculation of the teacher shortage index.

For the 1987-88 school year, full-time vacancies were reported for 46 different teacher and administrator positions. The greatest number of districts, 114, reported vacancies for full-time elementary education positions. The positions with the least number of full-time vacancies were Italian and psychology. Only one district reported a full-time vacancy for each of these. Very few vacancies also existed for earth science. More districts (26) reported full-time vacancies in general science than in any other science. Half or less of this number was reported for each of the remaining sciences (biology, chemistry, earth science and physics). Administrator vacancies were greatest for vice principals. A total of 45 districts reported at least one full-time vacancy for this position (see Table 1 and Appendix B).

Table 1
Number of Districts Reporting
at Least One Full-Time Vacancy

Highest	Districts (Vacancies)	Lowest	Districts (Vacancies)
Elementary Education	114 (646)	Italian	1 (1)
Learning Disabled	80 (173)	Other Language	1 (1)
English	57 (92)	Psychology	1 (2)
Music	55 (93)	Deaf Education	2 (2)
Speech and Hearing	50 (102)	Earth Science	2 (2)
Vice Principal	45 (60)	German	2 (2)

The median or typical number of applications reviewed per district for the available positions varied widely. Based on a minimum of three districts and four vacancies per position, the typical district reviewed 100 applications for elementary education teaching positions. High numbers of applications were also reviewed by districts for preschool teaching positions and three types of administrative positions. The typical district also reviewed a high number of applications for history, history/social studies and English positions. These three positions correspond to liberal arts areas of college study. Positions with the lowest number of applications per district largely represented vocational areas, such as home economics, industrial arts and agriculture. Two areas of special education (speech and hearing, physical handicap) and physics and chemistry also generated low rates of applications per district (see Table 2). The typical school district reviewed more applications for math, biology, earth and general science positions than for physics and chemistry (see Appendix B).

Table 2
Median Applications per District

Highest		Lowest	
Elementary	100	Speech and Hearing	4
Superintendent	39	Home Economics	5
Principal	34	Physics	5
Kindergarten/Pre-K	32	Adult ESOL	6
History	29	Agriculture	6
History/Social Studies	26	Industrial Arts	6
Vice Principal	26	School Nurse-Teacher	6
English	25	Chemistry	6
		Physical Handicap	6

Districts experienced less difficulty filling the teacher positions than the administrative positions. Across the state, qualified applicants were not found for 18 of the 46 (39.1%) teacher positions. However, qualified applicants were not found for five of the eight (62.5%) administrative positions. Overall, there were three teaching positions, one support staff position and one administrator position for which 20% or more of the districts with full-time vacancies reported that a qualified person was not found. The median number of applications per district was low for four of these positions and moderate for the pupil personnel director position (see Table 3). Moreover, six of the ten districts which did not find a qualified speech and hearing teacher reported they received only one application from a qualified person. Four of the eight districts with a vacant media specialist position also reported the receipt of one qualified application. It should be noted that four of these positions require a master's degree.

Table 3
**Areas With Greatest Lack of Qualified Persons
for Districts Reporting Full-Time Vacancies**

Position	Districts: Full-Time Vacancies	Districts: No Qualified Person Found	Percent No Qualified Person Found	Applications Per District	
				Median	Max
Industrial Arts/ Technology	20	5	25	6	65
Pupil Personnel Dir.	14	3	22	15	40
School Psychologist	33	7	21	7	35
Media Specialist	38	8	21	8	20
Speech and Hearing	50	10	20	4	97

Position groups. To determine whether teacher shortages were more prominent in certain subject categories, the positions listed on the survey form were grouped into 12 categories. Ten categories were largely based on teacher positions that represent the categories of skills and competencies developed in *Connecticut's Common Core of Learning* (Connecticut State Board of Education, 1987). Support staff and administrator categories correspond to those reported in the annual *School Staff Report*.

Both elementary and kindergarten/prekindergarten comprised the elementary group. Arts consisted of art and music positions. Career and vocations included agriculture, business and office education, home economics, industrial arts, marketing, related subjects, occupational subjects and skilled trades. History and social sciences included history, history/social studies, psychology and sociology. English was comprised of English and adult ESOL. Math and science consisted of mathematics, the sciences and computer education. Physical health and development was generated using health, physical education and driver education. Other exceptionalities consisted of blind education, deaf education, partially sighted, speech and hearing, as well as the gifted and talented. Support staff included media specialist, reading consultant, guidance counselor, dental hygienist, nurse-teacher, school psychologist and school social worker. Foreign languages, special education and administration groupings were based on the structure of the survey form (see Appendix A).

Districts which reported full-time vacancies varied extensively for the 12 position groups. The fewest number of districts, 28, reported at least one full-time vacancy in foreign language. By comparison, the greatest number of districts, 115, reported a full-time vacancy in elementary education. Ninety or more districts reported full-time vacancies for special education teachers, as well as support staff and administrator positions (see Table 4).

The typical school district received the fewest applications for other exceptionalities, career and vocations, support staff and foreign languages. Of these position categories, only the foreign language positions were filled. The remaining three categories had the highest percentage of districts with vacancies due to the lack of qualified persons. Overall, every history/social studies, English, foreign language and physical education position was filled prior to September 1. One district was unable to fill a position in math and science. Similarly, few vacancies were attributed to the lack of a qualified applicant in other teacher categories. Finally, although the typical district reviewed a relatively high number of applications for administrator positions, nine districts were unable to find a qualified person by September 1 (see Table 4).

Table 4
Shortage Areas by Position Category

Position Category	Districts: Full-Time Vacancies	Districts: No Qualified Person Found	Percent No Qualified Person Found	Applications Per District	
				Median	Max
Elementary Education	115	2	2	80	500
Arts	66	3	5	15	100
Career and Vocations	47	7	15	6	84
Foreign Language	28	0	0	8	35
History and Social Sciences	41	0	0	25	200
English	59	0	0	25	127
Math and Science	61	1	2	11	80
Physical Health and Development	40	0	0	15	175
Special Education	107	7	7	15	200
Other Exceptionalities	61	10	16	5	97
Support Staff	92	20	22	8	62
Administration	90	9	10	22	200

TEACHER SHORTAGE INDEX

A teacher shortage index containing three components was calculated to more accurately identify five areas of teacher shortage in accordance with section 10a-163 of the state statutes. The index was calculated for individual areas of certification. However, to include all the data required by the statutes it was necessary to combine special education areas into one category. Similarly, administrative areas, except for school business officials and superintendents, were combined to form the intermediate administrator category.

The first component of the teacher shortage index is a teacher qualification factor. One part of this factor consists of the total number of full-time and part-time vacancies due to the lack of a qualified person. The qualification factor also contains the number of temporary emergency permits (TEP) and temporary authorization for minor assignments. Temporary permits and authorization are issued if a need exists. They represent a level of underqualification for a position. Since each factor was not considered to be of equal importance, they were weighted differently. Total vacancies were assigned a weight of one while temporary emergency permits and minor assignments were assigned weights of 0.8 and 0.2, respectively. Only those subject areas with an unfilled position or a position filled with an underqualified candidate were further evaluated to identify shortage areas.

The second component of the teacher shortage index represents the application rate for each position type. This component consists solely of the median number of applications per district. The median was multiplied by negative one so that a high median number of applications represented a low shortage area while a low median represented a high area of teacher shortage.

The third component of the teacher shortage index accounted for the potential pool of teachers. This component consisted of the total number of vacancies for each position divided by the total number of provisional certificates issued between September 1, 1986, and August 31, 1987. Provisional certificates are awarded to teachers who are qualified to teach in Connecticut. A high ratio is indicative of a small pool of potential applicants compared to the available positions and therefore high teacher shortage. Conversely, a low ratio is indicative of a large pool of applicants compared to the available positions and therefore low teacher shortage.

The calculation of the final teacher shortage index is based on the sum of the ranks of each component. Each individual component was ranked from one to 28, with 28 representing the area of greatest shortage and one representing the area with the least shortage. The three ranks were then summed to produce the teacher shortage index. Consistent with the calculation and ranking of each component, a high index represented a high teacher shortage area and a low index represented an area of low teacher shortage for the 1987-88 school year. If more than one position had the same index, they were ranked according to the score on the qualification factor.

Based on the above procedure, speech and hearing and industrial arts were identified as the top two teacher shortage areas for the 1987-88 school year, followed by media specialist, school psychologist and Latin. History/social studies and deaf education were identified as the areas with the least shortage. The five highest and lowest shortage areas are presented in Table 5. All ranked positions are presented in Appendix C along with positions for which no vacancies existed. Rank 1 of the appendix is the qualification component of the teacher shortage index. Rank 2 represents the application rate and Rank 3 is the potential pool of applicants component.

Table 5
Teacher Shortage Areas, 1987-88

High Shortage		Low Shortage	
	Index		Index
Speech and Hearing	82	History/Social Studies	12
Industrial Arts	73	Deaf Education	17
Media Specialist	66	General Science	21
School Psychologist	66	Mathematics	22
Latin	66	Chemistry	25

The inclusion of more than one component in the calculation of the teacher shortage index produces different reasons for the ranking of shortage areas. A low rank on the teacher qualification component is not necessarily indicative of a low shortage. This explains the high ranking of Latin as a shortage area. Latin ranked relatively low on the teacher qualification component. Yet, the ranks for the application rate and applicant pool components were very high. Hence, Latin emerged as a shortage area. The remaining four areas identified as high shortage areas for the 1987-88 school year were ranked high on all three index components.

The five areas identified as low shortage areas for the 1987-88 school year were all ranked low on the teacher qualification component. Rankings were also low for the application rate and applicant pool components. The only notable exception was the high ranking of the application rate for chemistry. This was due to the relatively low number of applications reviewed by the typical district for vacancies in chemistry.

The teacher shortage index demonstrated that there were no shortages in math and science for the 1987-88 school year. General science, math and chemistry were identified as three of the five areas of low teacher shortage. Physics and biology were the next two lowest ranked areas. Earth science was ranked eleventh of 28. The lowest ranking component for each area was the application rate. Yet, rankings were generally higher for the applicant pool component. This suggests that while there are currently enough qualified teachers, not that many apply for teaching positions. Nevertheless, there were enough qualified applicants to fill the few vacancies that occurred this year. Predictions of future shortages for any area cannot be made from these data.

APPLICATION RATE ANALYSIS

The preliminary analysis and the teacher shortage index provided an indication of the extent of a teacher shortage for specific positions. The median number of applications per district was a measure of shortage for each procedure. As a follow-up to these results, the number of applications reviewed was evaluated by county and community type. The results of the analyses should demonstrate whether different rates of applications were received for selected teacher and administrator positions. School districts may then be able to use this information as a basis for developing hiring strategies to ensure that they attract a reasonable amount of qualified applicants.

Three position types were selected for the location analysis. Two teacher positions (elementary education and learning disabled) were selected which represent the greatest number of districts reporting a full-time teacher vacancy. An administrator position (vice principal) was selected under the same criteria.

County. Only local public school districts were grouped into counties for analysis. Other district types were excluded from this classification since other district types tend to serve more than a single county.

As indicated by the number of districts reporting a full-time vacancy, two positions — elementary education and teacher of the learning disabled — were selected. Prior to the beginning of the 1987-88 school year, there were 646 full-time elementary education teacher vacancies in 114 local public school districts. By comparison, 173 vacancies for full-time teachers of the learning disabled in 78 local public school districts were classified into the appropriate county.

Since almost every district reported elementary teacher vacancies, the number of vacancies in a county was a function of the number of districts and the size of the districts in each county. Of the eight counties in Connecticut, Middlesex and Litchfield had the fewest school districts which reported full-time vacancies for elementary education teachers. By contrast, New Haven, Hartford and Fairfield counties had the most districts with vacancies. The typical school district in five counties reviewed 100 or more applications for the available vacancies. Fewer applications were reviewed by the typical school district in the remaining three counties. Districts in Middlesex County reported the fewest full-time vacancies. Yet, the typical districts in Litchfield and Windham counties reviewed approximately one-half as many applications for the available vacancies as did districts in the other counties (see Table 6).

Table 6
Application Rates by County,
Elementary Education Teacher Vacancies

County	Number of Districts	Total Full-Time Vacancies	-----Median District----- Full-Time Vacancies	<u>Applications</u>	Districts: No Qualified Person Found
Fairfield	20	157	6	105	0
Hartford	21	183	5	140	6
Litchfield	9	30	2	45	0
Middlesex	8	19	1	90	0
New Haven	22	145	4	100	0
New London	14	47	3	100	1
Tolland	10	27	2	102	0
Windham	10	38	3	55	0

School districts in all eight counties reported full-time vacancies for teachers of the learning disabled. The number of public school districts in a county with at least one full-time vacancy ranged from three in Middlesex County to 16 in New Haven County. The fewest number of full-time vacancies occurred in Middlesex County, while the greatest number of vacancies were in Fairfield and Hartford counties. Fairfield and Hartford counties had the same number of districts and the same total number of vacancies (see Table 7).

The number of applications reviewed by the typical school district in each county ranged from 9 to 22. Districts in Fairfield, Hartford and Tolland Counties typically received more than 20 applications for the available positions. Districts in Litchfield, New London and Middlesex counties typically received between 15 and 18 applications, while New Haven County districts received 11 and Windham County districts received 9. Comparable to the pattern for

elementary education teacher positions, Windham County received the fewest applications for positions for teachers of the learning disabled. As of September 1, four vacancies remained in Hartford County due to the lack of qualified persons. All positions in the other counties were filled by September 1.

Table 7
Application Rates by County,
Teacher of the Learning Disabled Vacancies

County	Number of Districts	Total Full-Time Vacancies	-----Median Full-Time Vacancies	District----- Applications	Districts: No Qualified Person Found
Fairfield	14	39	2	22	0
Hartford	14	39	1	21	4
Litchfield	7	14	2	15	0
Middlesex	4	5	1	15	0
New Haven	16	28	2	11	0
New London	10	16	1	18	0
Tolland	7	14	2	20	0
Windham	6	9	1	9	0

The same counties with the highest number of vacancies for the selected teacher positions had the highest number of vacancies for vice principals. New Haven County had 16 full-time vacancies in 10 districts, while Fairfield and Hartford counties each had 11 vacancies in 9 and 8 districts, respectively. There were no vacancies for full-time vice principals in Litchfield county.

For the available positions, districts in Fairfield County typically received 60 applications. Except for Middlesex County districts which typically received 38 applications, the districts in the remaining counties received less than half the number of applications of Fairfield County districts. Tolland County districts reviewed the fewest applications. Of the vacancies which did exist, all were filled before September 1 (see Table 8).

Table 8
Application Rates by County,
Vice Principal Vacancies

County	Number of Districts	Total Full-Time Vacancies	-----Median Full-Time Vacancies	District----- Applications	Districts: No Qualified Person Found
Fairfield	9	11	1	60	0
Hartford	8	11	1	29	0
Litchfield	0	0	0	--	-
Middlesex	2	3	2	38	0
New Haven	10	16	1	24	0
New London	6	7	1	21	0
Tolland	2	2	1	19	0
Windham	5	7	1	23	0

Community type. The positions which were analyzed by county also were analyzed according to community type. The purpose of this analysis was to provide another perspective on application rates.

Six hundred forty-six full-time vacancies for elementary education in 114 local public school districts were grouped by community type. Similarly, 164 of 173 full-time learning disabled teacher vacancies in 78 of 80 local public school districts were classified into the appropriate community type.

As might be expected, large city and fringe city communities reported the most full-time elementary education teacher vacancies while small-emerging suburbs reported the fewest vacancies. Large and fringe cities also reviewed the most applications while the fewest were reviewed in the typical school districts of small rural communities. Overall, each district appeared to review a sufficient number of applications. Nevertheless, six vacancies remained in large cities and one in a medium city as of September 1. All were attributed to the lack of a qualified applicant (see Table 9).

Full-time vacancies for teachers of the learning disabled were greatest in small suburban communities and least in large cities and small rural areas. The typical districts in fringe cities and small-emerging suburbs reviewed the highest numbers of applications. Districts in large cities reviewed the fewest. Vacancies due to the lack of a qualified person were reported in large and fringe cities (see Table 10). In general, vacancies for teachers of the learning disabled attracted fewer applications than vacancies for elementary education teachers.

Table 9
Application Rates by Community Type,
Elementary Education Teacher Vacancies

Community	Number of Districts	Total Full-Time Vacancies	-----Median District----- Full-Time Vacancies	Applications	Districts: No Qualified Person Found
Large City	5	153	38	245	6
Fringe City	20	145	5	136	0
Medium City	14	88	6	115	1
Small Suburb	33	128	3	85	0
Small-Emerging Suburb	20	56	2	93	0
Small Rural	22	76	3	55	0

Table 10
Application Rates by Community Type,
Teacher of the Learning Disabled Vacancies

Community	Number of Districts	Total Full-Time Vacancies	-----Median Full-Time Vacancies	District----- <u>Applications</u>	Districts: No Qualified Person Found
Large City	3	20	4	8	3
Fringe City	13	24	1	22	1
Medium City	10	26	2	15	0
Small Suburb	20	42	2	16	0
Small-Emerging Suburb	18	33	2	20	0
Small Rural	14	19	1	14	0

Vice principal positions were analyzed by community type. Medium city districts reported the lowest number of full-time vacancies while small suburban districts reported the most vacancies. The lowest median number of applications per district occurred in medium cities and the highest median number was in the large city districts. No vacancies existed as of September 1 for vice principal positions (see Table 11).

Table 11
Application Rates by Community Type,
Vice Principal Vacancies

Community	Number of Districts	Total Full-Time Vacancies	-----Median Full-Time Vacancies	District----- <u>Applications</u>	Districts: No Qualified Person Found
Large City	2	8	4	44	0
Fringe City	10	13	1	24	0
Medium City	5	5	1	14	0
Small Suburb	14	16	1	30	0
Small-Emerging Suburb	6	8	1	24	0
Small Rural	5	7	1	23	0

CONCLUSIONS

An estimate of the possible existence of a teacher shortage in Connecticut for the 1987-88 school year was made at both the state level and at the individual position level. At the state level 38,706 applications from appropriately certified candidates were reviewed for 2,429 full-time and 416 part-time vacancies. At first glance it may appear that there was no teacher shortage in Connecticut. However, the general information provided by the aggregation of data at the state level is limited. It does not indicate whether shortages existed for specific teacher and administrative positions. Analyses of positions with reference to the number of districts with vacancies and the number of applications reviewed by the typical district provided more specific results.

The most comprehensive analysis of the possible existence of a teacher shortage was conducted through the development of a teacher shortage index. The index was designed to include more variables related to teacher shortages than the prior analyses. Positions which were vacant as of September 1 were included, as were positions filled by underqualified individuals as indicated by the number of temporary emergency permits and temporary authorizations for minor assignments. Also included in the index were the median number of applications and a ratio of the number of provisional certificates issued per available position. Hence, the teacher shortage index was more comprehensive than the prior analyses. It was limited only to the extent that special education positions were grouped, as were most administrative positions.

With one exception, the results generated through the calculation of the teacher shortage index paralleled those of the previous position analysis. Speech and hearing was identified as the highest shortage area for the 1987-88 school year. This was followed by industrial arts, media specialist, school psychologist and Latin. Collectively, all the results indicate that while no extensive teacher shortage existed in Connecticut for the 1987-88 school year, shortages did exist for some identified positions.

While the analyses account for what appear to be strong indicators of teacher shortages, seasonal, historical and demographic factors not included may be affecting the results to some extent. A seasonal factor such as district recruiting practices may be related to the number of applications reviewed for the available positions. Some districts noted their extensive recruiting practices on the teacher survey form.

From an historical perspective, the Education Enhancement Act and the new certification requirements could affect the application rate. Many districts noted on the Teacher Shortage Survey form that many "fine" and qualified applicants were available. Only a few districts noted a decrease in the pool of applicants. Minority and part-time applicants were particularly difficult to find. More districts attributed the abundance of applicants to higher salaries resulting from Education Enhancement than did not. Other districts attributed the high number of applicants to the districts' reputations. However, some districts indicated that Education Enhancement had no impact on the number of applicants, or that it was too early to evaluate the impact. Demographically, the high cost of living may influence the number of applications submitted and the number of positions accepted.

Finally, it should be understood that the results generated by the procedures in this report are valid for the 1987-88 school year only. They are not necessarily predictive of future shortage areas. Teacher supply and demand is better suited for this purpose. At the very least, it is important for individual districts to be aware of their retirement and enrollment trends to adequately assess their needs.

Appendix A
Teacher Shortage Survey - September 1987
Statewide Vacancies and Certified Applicants,
By Position

POSITION	1987-88 VACANCIES		NUMBER OF CERTIFIED APPLICANTS	SEPTEMBER 1 VACANCIES		VACANCY: NO QUALIFIED PERSON FOUND	
	FULL- TIME	PART- TIME		FULL- TIME	PART- TIME	FULL- TIME	PART- TIME
TEACHERS							
ADULT ESOL	16	0	32	2	0	0	0
AGRICULTURE	5	1	40	0	1	0	1
ART	48	28	619	3	2	2	0
BLIND EDUCATION	0	0	0	0	0	0	0
BUS. AND OFFICE ED.	13	3	149	0	0	0	0
DEAF EDUCATION	2	0	23	0	0	0	0
DRIVER EDUCATION	0	1	3	0	1	0	1
ELEMENTARY ED.	646	27	14,096	23	1	7	1
ENGLISH	92	17	1,857	4	0	0	0
FOREIGN LANGUAGES							
FRENCH	10	24	267	0	2	0	0
GERMAN	2	2	11	0	0	0	0
ITALIAN	1	1	7	0	0	0	0
LATIN	0	5	13	0	0	0	0
RUSSIAN	0	0	0	0	0	0	0
SPANISH	27	17	333	0	0	0	0
OTHER	1	4	10	0	0	0	0
HEALTH	12	4	104	0	2	0	2
HISTORY	10	2	278	0	0	0	0
HIST./SOCIAL STUDIES	48	9	1,429	4	0	0	0
HOME ECONOMICS	28	12	208	1	0	1	0
INDUSTRIAL ARTS/							
TECHNOLOGY ED.	32	6	210	7	0	7	0
KINDERGARTEN/PRE-K	68	45	2,973	1	1	1	0
MARKETING	4	1	12	0	0	0	0
MATHEMATICS	41	14	879	1	0	0	0
MEDIA SPECIALIST	57	2	337	12	1	11	1
MUSIC	93	34	1,209	4	5	1	3
PARTIALLY SIGHTED	0	0	0	0	0	0	0
PHYSICAL EDUCATION	59	16	1,129	2	1	0	1
PSYCHOLOGY	2	2	25	0	0	0	0
READING CONSULTANT	32	7	396	5	0	2	0
RELATED SUBJECTS	25	0	58	0	0	0	0
GUIDANCE COUNSELOR	57	4	580	10	0	1	0
SCHOOL DENTAL HYG.	0	0	0	0	0	0	0
SCHOOL NURSE-TEACH.	10	0	60	0	0	0	0
SCHOOL PSYCHOLOGIST	55	13	371	9	5	8	3
SCHOOL SOCIAL WORK.	42	6	355	6	2	3	1

Appendix A (continued)

POSITION	1987-88 VACANCIES		NUMBER OF CERTIFIED APPLICANTS	SEPTEMBER 1 VACANCIES		VACANCY: NO QUALIFIED PERSON FOUND	
	FULL- TIME	PART- TIME		FULL- TIME	PART- TIME	FULL- TIME	PART- TIME
SOCIOLOGY	0	0	0	0	0	0	0
SCIENCE							
BIOLOGY	14	7	229	1	0	1	0
CHEMISTRY	10	2	82	0	0	0	0
EARTH SCIENCE	2	4	49	0	0	0	0
GENERAL SCIENCE	34	9	721	1	0	0	0
PHYSICS	7	0	71	0	0	0	0
SPECIAL EDUCATION							
LEARNING DISABLED	173	18	1,888	11	0	4	0
SOCIAL/EMOTIONAL	92	2	758	10	0	7	0
MENTALLY RETARDED	63	1	330	14	0	14	0
PHYSICAL HANDICAP	7	0	40	0	0	0	0
OTHER	88	5	506	3	0	2	0
SPEECH AND HEARING	102	36	485	33	16	28	15
OCCUPATIONAL SUB.	2	0	2	0	0	0	0
SKILLED TRADES	60	0	84	8	0	6	0
COMPUTER ED.	5	4	107	2	0	0	0
GIFTED/TALENTED	28	9	293	2	1	0	0
OTHER TEACHER	2	0	44	0	0	0	0
TEACHER TOTAL	2,227	414	33,762	182	40	105	28
ADMINISTRATORS							
PRINCIPAL	47	2	1,616	6	0	2	0
VICE PRINCIPAL	60	2	1,473	5	0	2	0
SUPERVISOR/DIRECTOR	31	5	540	10	0	3	0
PUPIL PERSONNEL	20	0	228	5	0	3	0
ASST. SUPERINTENDENT	12	0	280	2	0	1	0
OTHER ADMINISTRATOR	18	3	396	2	1	1	0
SCH. BUSINESS OFFICIAL	9	0	261	1	0	0	0
SUPERINTENDENT	5	0	151	4	0	0	0
ADMINISTRATOR TOTAL	202	12	4,944	35	1	12	0
STATE TOTAL	2,429	416	38,706	217	41	117	28

Appendix B
Teacher Shortage Survey - September 1987
Subject Area Shortage Evaluation

POSITION	DISTRICTS: FULL-TIME VACANCIES	NO QUALIFIED PERSON FOUND		DISTRICTS: APPLICATIONS PER DISTRICT	
		TOTAL	PERCENT	MEDIAN	MAX
TEACHERS					
ADULT ESOL	4	0	0	6	18
AGRICULTURE	5	0	0	6	12
ART	29	2	7	15	50
BUSINESS AND OFFICE ED.	10	0	0	9	30
DEAF EDUCATION	2	0	0	12	22
ELEMENTARY EDUCATION	114	2	2	100	500
ENGLISH	57	0	0	25	127
FOREIGN LANGUAGES					
FRENCH	10	0	0	9	30
GERMAN	2	0	0	5	5
ITALIAN	1	0	0	4	4
SPANISH	19	0	0	8	35
OTHER	1	0	0	1	1
HEALTH	8	0	0	10	30
HISTORY	6	0	0	29	125
HISTORY/SOCIAL STUDIES	34	0	0	26	200
HOME ECONOMICS	23	1	4	5	20
INDUSTRIAL ARTS/ TECHNICAL EDUCATION	20	5	25	6	65
KINDERGARTEN/PRE-K	37	1	3	32	200
MARKETING	2	0	0	6	7
MATHEMATICS	31	0	0	20	75
MEDIA SPECIALIST	38	8	21	8	20
MUSIC	55	1	2	15	100
PHYSICAL EDUCATION	37	0	0	18	175
PSYCHOLOGY	1	0	0	5	5
READING CONSULTANT	25	2	8	11	35
RELATED SUBJECTS	1	0	0	58	58
GUIDANCE COUNSELOR	35	1	3	14	62
SCHOOL NURSE-TEACHER	10	0	0	6	14
SCHOOL PSYCHOLOGIST	33	7	21	7	35
SCHOOL SOCIAL WORKER	25	3	12	7	45
SCIENCE					
BIOLOGY	13	1	8	10	57
CHEMISTRY	10	0	0	6	10
EARTH SCIENCE	2	0	0	10	10
GENERAL SCIENCE	26	0	0	12	80
PHYSICS	7	0	0	5	36

Appendix B (continued)

POSITION	DISTRICTS: FULL-TIME VACANCIES	DISTRICTS: NO QUALIFIED		APPLICATIONS	
		PERSON	FOUND	PER DISTRICT	
		TOTAL	PERCENT	MEDIAN	MAX
SPECIAL EDUCATION					
LEARNING DISABLED	80	2	2	15	200
SOCIAL/EMOTIONAL	38	3	8	12	78
MENTALLY RETARDED	20	1	5	15	30
PHYSICAL HANDICAP	5	0	0	6	17
OTHER	21	2	10	15	95
SPEECH AND HEARING	50	10	20	4	97
OCCUPATIONAL SUBJECTS	2	0	0	1	1
SKILLED TRADES	1*	1*	-	84	84
COMPUTER EDUCATION	5	0	0	12	21
GIFTED/TALENTED	22	0	0	9	35
OTHER TEACHER	2	0	0	22	40
ADMINISTRATORS					
PRINCIPAL	34	2	6	34	200
VICE PRINCIPAL	45	2	4	26	110
SUPERVISOR/DIRECTOR	23	3	13	15	70
PUPIL PERSONNEL	14	3	21	15	40
ASST. SUPERINTENDENT	12	0	0	16	80
OTHER ADMINISTRATOR	10	1	10	26	125
SCH. BUSINESS OFFICIAL	9	0	0	15	85
SUPERINTENDENT	5	0	0	39	40

* Vocational-Technical Schools data reported collectively

APPENDIX C
1987-88 TEACHER SHORTAGE INDEX

POSITION	VACANCY: NO QUALIFIED PERSON FOUND	TEMPORARY EMERGENCY PERMIT	MINOR ASSIGNMENT	MEDIAN APPLICATIONS	TOTAL VACANCIES	PROVISIONAL CERTIFICATES	RANK 1	RANK 2	RANK 3	TEACHER SHORTAGE INDEX
SPEECH & HEARING	43	1	0	3.0	138	53	28	27	27	82
INDUSTRIAL ARTS	7	6	0	5.0	38	19	24	23	26	73
MEDIA SPECIALIST	12	7	0	8.0	59	42	26	16	24	66
SCHOOL PSYCHOLOGIST	11	0	0	6.0	68	56	23	21	22	66
LATIN	0	0	6	2.0	5	1	10	28	28	66
HOME ECONOMICS	1	0	0	5.0	40	27	8	23	25	56
SPECIAL EDUCATION	27	3	0	15.0	449	421	27	6	21	54
SCHOOL SOCIAL WORKER	4	0	0	8.0	48	70	20	16	17	53
MUSIC	4	0	0	14.0	127	96	20	8	23	51
ART	2	0	0	9.5	76	72	14	13	20	47
SPANISH	0	1	4	8.0	44	57	11	16	19	46
HEALTH	2	0	0	6.0	16	43	14	21	9	44
INTERMEDIATE ADMINISTRATOR	11	1	0	20.0	200	377	24	4	12	40
READING CONSULTANT	2	1	0	11.5	39	85	17	11	11	39
GUIDANCE COUNSELOR	1	2	0	12.5	61	111	16	9	14	39
FRENCH	0	0	4	8.0	34	49	5	16	18	39
ELEMENTARY EDUCATION	9	1	0	68.0	786	1454	22	1	13	36
EARTH SCIENCE	0	2	6	9.0	6	35	17	14	4	35
PHYSICAL EDUCATION	1	1	0	15.0	75	124	12	6	16	34
ENGLISH	0	0	14	25.0	109	186	17	2	15	34
AGRICULTURE	1	0	0	5.0	6	40	8	23	2	33
BIOLOGY	1	1	0	8.5	21	109	12	15	5	32
PHYSICS	0	0	1	5.0	7	25	1	23	6	30
CHEMISTRY	0	0	2	7.0	42	72	2	20	3	25
MATHEMATICS	0	0	5	19.0	55	143	7	5	10	22
GENERAL SCIENCE	0	0	3	12.0	43	120	3	10	8	21
DEAF EDUCATION	0	1	0	11.5	2	16	5	11	1	17
HISTORY/SOCIAL STUDIES	0	0	3	25.0	57	198	3	2	7	12
OTHER LANGUAGE	0	0	0	1.0	5	1	.	.	.	.
OCCUPATIONAL SUBJECTS	0	0	0	1.0	2	7	.	.	.	.
DRIVER EDUCATION	0	0	0	3.0	1	14	.	.	.	.
ITALIAN	0	0	0	3.5	2	10	.	.	.	.
GERMAN	0	0	0	5.0	4	8	.	.	.	.
PSYCHOLOGY	0	0	0	5.0	4	1	.	.	.	.
NURSE-TEACHER	0	0	0	5.5	10	20	.	.	.	.
MARKETING	0	0	0	6.0	5	6	.	.	.	.
ADULT ESOL	0	0	0	6.5	16	6	.	.	.	.
GIFTED/TALENTED	0	0	0	7.0	37	42	.	.	.	.
BUSINESS & OFFICE EDUCATION	0	0	0	10.0	16	52	.	.	.	.
COMPUTER EDUCATION	0	0	0	11.0	9	42	.	.	.	.
SCHOOL BUSINESS OFFICIAL	0	0	0	15.0	9	29	.	.	.	.
HISTORY	0	0	0	20.0	12	19	.	.	.	.
OTHER TEACHER	0	0	0	22.0	2	27	.	.	.	.
SUPERINTENDENT	0	0	0	39.0	5	44	.	.	.	.

THERE WERE NO VACANCIES FOR BLIND EDUCATION, SOCIOLOGY,
PARTIALLY-SIGHTED, OR DENTAL HYGIENISTS.

THERE WERE 25 VACANCIES IN RELATED SUBJECTS, 60 IN
SKILLED TRADES, AND 2 IN OCCUPATIONAL SUBJECTS

Appendix D

TEACHER SHORTAGE SURVEY
ED 156 Rev. 8-87
C.G.S. 10a-163

INSTRUCTIONS

1. Read detailed instructions on reverse side.
2. Prepare in duplicate.
3. Send original to address below.
4. Due September 15

TO: CONNECTICUT STATE DEPARTMENT OF EDUCATION, Office of Research and Evaluation, Box 2219, Hartford, CT 06145

District Name	Code / / /	Contact Person	Phone
Superintendent's Signature			Date

Certification/ Subject Area	(A) Vacancies For 87-88 School Yr		(B) Number of Certified Applicants	(C) Number of September 1st Vacancies		(D) Vacancy: No Qualified Person Found	
	FT	PT		FT	PT	FT	PT
TEACHERS:							
1. Adult ESOL							
2. Agriculture							
3. Art							
4. Blind Education							
5. Business and Office Education							
6. Deaf Education							
7. Driver Education							
8. Elementary Education							
9. English							
FOREIGN LANGUAGE							
10. French language							
11. German language							
12. Italian language							
13. Latin language							
14. Russian language							
15. Spanish language							
16. Other language							
17. Health							
18. History							
19. History/Social Studies							
20. Home Economics							
21. Industrial Arts/ Technology Education							
22. Kindergarten/Prekindergarten							
23. Marketing and Distribution							
24. Mathematics							
25. Media Specialist							
26. Music							
27. Partially Sighted							
28. Physical Education							
29. Psychology							
30. Reading Consultant							
31. Related Subjects (RVT Schools)							
32. School Counselor							
33. School Dental Hygienist							
34. School Nurse-teacher							
35. School Psychologist							
36. School Social Worker							

Certification/ Subject Area	(A) Vacancies For 87-88 School Yr		(B) Number of Certified Applicants	(C) Number of September -1st Vacancies		(D) Vacancy: No Qualified Person Found	
	FT	PT		FT	PT	FT	PT
	SCIENCE						
37. Biology							
38. Chemistry							
39. Earth Science							
40. General Science							
41. Physics							
42. Sociology							
SPECIAL EDUCATION							
43. Learning Disabled							
44. Social/Emotional							
45. Mentally Retarded							
46. Physical Handicap							
47. Other							
48. Speech & Hearing							
TRADE AND INDUSTRIAL							
49. Occupational Subjects (LEAs)							
50. Skilled Trades (RVT Schools)							
OTHER SUBJECTS*							
51. Computer Education							
52. Gifted/Talented							
ADMINISTRATION							
53. Principal							
54. Vice-Principal							
55. Supervisor/Director							
56. Pupil Personnel							
57. Asst. Superintendent							
58. Other							
59. School Business Official							
60. Superintendent							

* Certification required at appropriate grade level.

COMMENTS:

DETAILED INSTRUCTIONS

1. Leave blank any subject area with no available positions.
2. Report positions requiring multiple certification (e.g. Spanish/French teacher) as part-time under each area.
3. Note with an "*" and record in the COMMENTS section, positions with special requirements (e.g. bilingual special education).
4. Report under (A) the number of full-time (FT) and part-time (PT) vacancies made available by retirements, death, teachers on leave, etc and new positions needed to bring staffing to the levels authorized by your board of education for the 1987-88 school year. Do NOT include positions filled by teachers returning from leave.
5. Report under (B) the number of applicants appropriately certified for the position. This may be estimated.
6. Report under (C) the total number of all vacancies as of the start of school. This count plus the teachers reported on forms TRU-3 and TRU-3a should equal the number of positions authorized by your board of education.
7. Report under (D) the number of positions vacant under (C) because no qualified person was available.

**Connecticut State
Department of Education**

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